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MULTIPLE INFLAMMATORY PSEUDOTUMORS OF THE LIVER AND SPLEEN

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Background: A 43-year-old woman presented with periods of fever of 4 weeks duration, epigastric pain and significant loss of weight (16 kg). Laboratory findings revealed elevated C-reactive protein and slightly elevated liver function tests. She had a history of gastric banding 7 years before, which has been removed 8 weeks before. This surgery was complicated by local abscess formation.

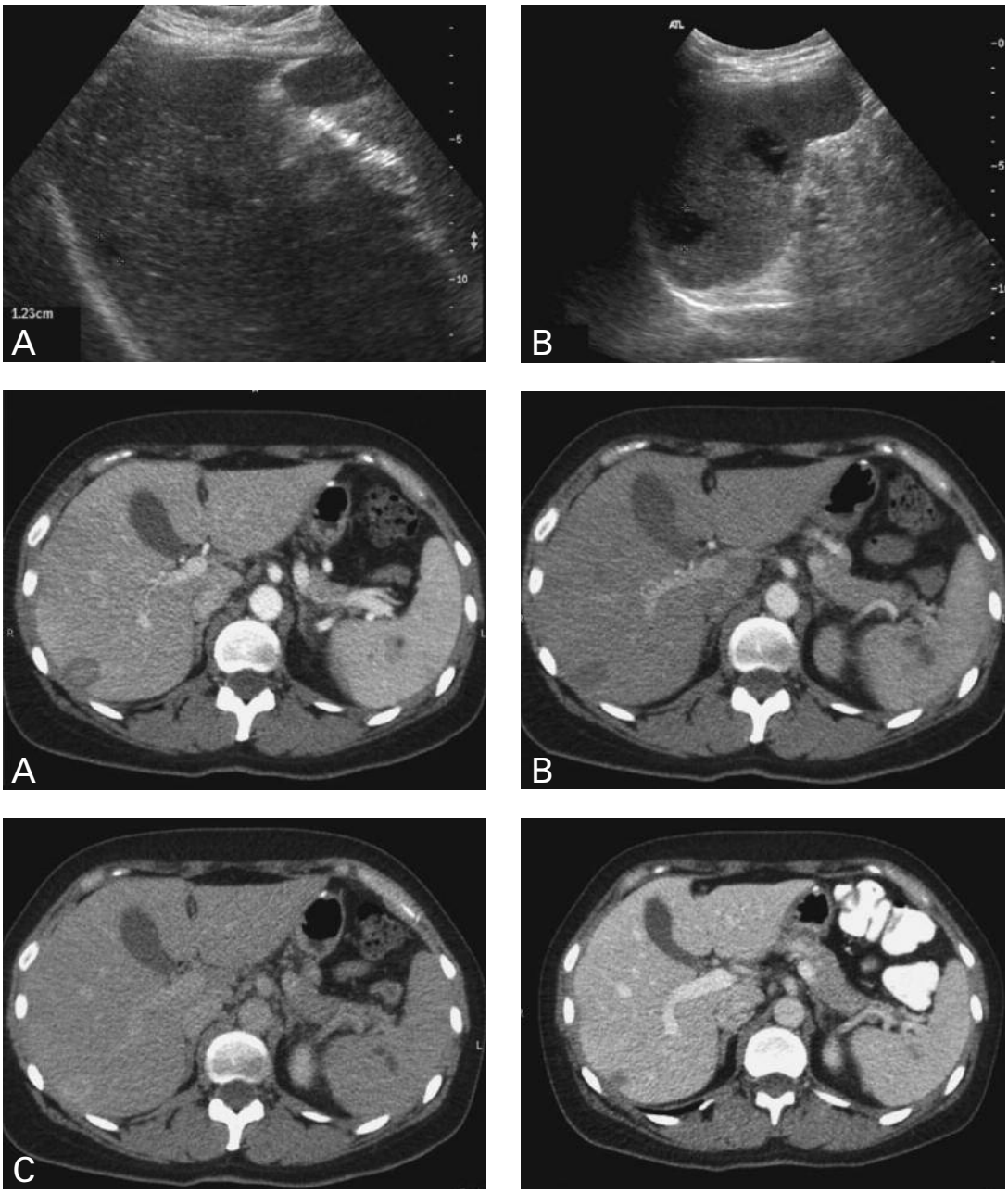

Fig. 1A 1B 2A 2B 2C 3

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Work-up

Ultrasonography of the upper abdomen (Fig. 1) (A: sagittal section through the liver and B: sagittal section through the spleen) reveals multiple hypoechogenic, ill-defined nodules in liver and spleen.

Contrast-enhanced CT scan of the upper abdomen (Fig. 2) demonstrates moderately enhancing multiple lesions in liver and spleen indicating a hypovascular aspect. The lesions show a slow centrifugal pattern of enhancement, as shown on the scans obtained during arterial phase (A), venous phase (B) and delayed phase (C).

On follow-up contrast-enhanced CT scan of the upper abdomen, 6 weeks later, following administration of antibiotics (Fig. 3) a spectacular decline of the number and size of the lesions of the liver and the spleen is noticed.

Radiological diagnosis

Screening revealed no primary malignant tumor. Percutaneous biopsy was performed. Histopathological examination revealed the diagnosis of *inflammatory pseudotumor of liver and spleen*. Based on the clinical and radiological findings, the differential diagnosis included metastasis and multiple inflammatory pseudotumors.

Discussion

Inflammatory pseudotumor is a benign mass with fibroblastic proliferation and infiltration of chronic inflammatory cells, with a predominance of plasma cells, histiocytes, lymphocytes and some eosinophils.

The lesion can occur in nearly every site of the body, but most commonly involves lung and orbit. Inflammatory pseudotumor of the liver and spleen is extremely rare and mostly presents as a large, solitary mass, although multiple tumors have been described. The etiology remains unclear.

Symptoms related to inflammatory pseudotumor of the liver include fever, epigastric pain, vomiting, general malaise and weight loss. Leucocytosis and C-reactive protein elevation have frequently been found. Liver function tests may be normal or enzyme levels may be slightly elevated.

Radiological findings of inflammatory pseudotumor are non specific and variable. On ultrasonography the lesions appear as heterogeneous and hypo-, hyper- or isoechogenic mass lesions.

On CT, the masses present as ill-defined, hypoattenuating lesions. Following administration of contrast medium, only moderate degree and a variety of patterns of enhancement have been noted. No characteristic enhancement pattern was apparent. On CT scans during delayed phase the masses frequently exhibit hypo-attenuating areas with iso- or hyperattenuating thickened periphery. The radiographic appearance depends on differing ratios of cellular infiltration to fibrosis.

In the presented case, no significant fibrosis was seen on pathologic examination, and there was a proliferation of myofibroblast-like cells. The areas with hypoechogenicity and low attenuation on CT scan corresponded to predominantly cellular infiltration. Delayed peripheral enhancement can be explained by accumulation of contrast material in the extravascular space.

In summary the radiological findings are not characteristic for inflammatory pseudotumor of the liver.

Therefore percutaneous biopsy should be performed.

The differential diagnosis includes liver abscess, metastasis, peripheral cholangiocarcinoma and hepatocellular carcinoma. In the presented case, however, the combination of lesions in liver and spleen excludes a primary liver tumor.

Inflammatory pseudotumor of the liver should be included in the differential diagnosis in patients with hepatic masses. Because the mass can regress spontaneously or be managed conservatively, awareness of this condition and recognition of its manifestation may guide to perform a liver biopsy and avoid unnecessary surgery.

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